REMARKS

Claims 1-25 were submitted for examination. Claims 1-25 have been rejected.

Claims 1, 14, 19 and 20 have been amended.

No new matter has been added.

Reconsideration and reexamination of the above-referenced patent application, as amended, is respectfully requested.

35 U.S.C. § 102(b) Rejection – Hileman

Claims 1-5, 8-16, 19-22 and 25 have been rejected by the Examiner under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,052,285 to Vince Hileman ("Hileman").

Independent claim 1 recites in part:

"a first device capable of generating heat, wherein the first device is to be cooled using a cooling system having an active cooling component in parallel with a passive cooling component."

(Emphasis added).

Hileman teaches an assembly that includes a heat pipe that extends from an electronic card. A condensation end of the heat pipe is inserted into a manifold constructed using a thermally conductive material. The manifold contains one or more channels which contain a coolant. The manifold is coupled to a compressor and a heat exchanger. Heat flows from the heat pipe through the conductive material into the coolant from the manifold. The coolant is pumped by the compressor into the heat exchanger. (Col. 2, line 30 to col. 3, line 5; Figure 2). The Examiner refers to the heat pipe cooling portion as passive cooling and the manifold cooling portion as active cooling. Thus, Hileman

teaches cooling the electronic card in a serial fashion using passive cooling followed by active cooling.

In contrast, claim 1 includes the limitation "the first device is to be cooled using a cooling system having an active cooling component in parallel with a passive cooling component."

Applicants submit that, at least for the above reason, the 102(b) rejection has been overcome and that claim 1 is patentable over Hileman. Since claims 2-13 depend from and further limit claim 1, applicants submit that claims 2-13 are also patentable over Hileman.

Independent claim 14 recites in part:

"cooling a first device using a combination of active loop cooling and heat pipe cooling, where in said active loop cooling includes a flow-enhancing device to enhance flow of a liquid coolant between the first device and a heat exchanger, wherein said heat pipe cooling includes a first heat pipe, and wherein a condensation end of the first heat pipe is directly coupled to the heat exchanger." (Emphasis added).

Hileman teaches the condenser end (or condensation end) of the heat pipe is inserted into the manifold. Hileman further teaches the coolant flowing through the channels in the manifold and pumped by the compressor into the heat exchanger. (Col. 2, line 41 to col. 3, line 5; Figure 2). Thus, the condensation end of the heat pipe taught by Hileman is separated from the heat exchanger by the manifold.

In contrast, claim 14 includes the limitation "a condensation end of the first heat pipe is directly coupled to the heat exchanger."

Applicants submit that, at least for the above reason, the 102(b) rejection has been overcome and that claim 14 is patentable over Hileman. Since claims

15-19 depend from and further limit claim 14, applicants submit that claims 15-19 are also patentable over Hileman.

Independent claim 20 recites in part:

"a first cooling component to provide active cooling to a first heat generating device, the first cooling component including a pipe loop, a flow-enhancer device and a heat exchanger, the pipe loop directly coupled to the first heat generating device; and

a second cooling component to provide passive cooling to the first heat generating device, the second cooling component including a heat pipe coupled to the first heat generating device and to the heat exchanger."

(Emphasis added).

Hileman teaches the heat pipe is coupled to a heat spreader which is coupled to an integrated circuit so that heat flows from the integrated circuit into an evaporator end of the heat pipe. A condenser end of the heat pipe is inserted into the manifold. The manifold includes channels carrying a coolant pumped by a compressor into a heat exchanger. (Col. 2, line 30 to col. 3, line 5; Figure 2). Thus, the channels are separated from the integrated circuit by the heat pipe.

In contrast, claim 20 includes the limitation "the pipe loop directly coupled to the first heat generating device".

Applicants submit that, at least for the above reason, the 102(b) rejection has been overcome and that claim 20 is patentable over Hileman. Since claims 21-25 depend from and further limit claim 20, applicants submit that claims 21-25 are also patentable over Hileman.

35 U.S.C. § 103(a) Rejection – Hileman & Yamamoto

Claims 6, 7, 17, 18, 23 and 24 have been rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over Hileman in view of U.S. Patent No. 4,729,060 to Haruhiko Yamamoto, et al. ("Yamamoto").

Since claims 6 and 7 depend from and further limit claim 1, claims 17 and 18 depend from and further limit claim 14, and claims 23 and 24 depend from and further limit claim 20, applicants submit that, at least for the reason given above for claims 1, 14 and 20, claims 6, 7, 17, 18, 23 and 24 are patentable over Hilernan In view of Yamamoto.

CONCLUSION

Applicants respectfully submit the present application is in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call David Tran at (408) 765-4692.

Authorization is hereby given to charge our Deposit Account No. 50-0221 for any charges that may be due.

Respectfully submitted,

Date: April 6, 2005 _____

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